



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,947	07/28/2003	Gregory J. May	200308970-I	9102
22879	7590	12/02/2004	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			BLACKMAN, ROCHELLE ANN J	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/628,947	MAY, GREGORY J. <i>AN</i>
	Examiner	Art Unit
	Rochelle Blackman	2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 01 September 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-35 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 35 is/are allowed.
 6) Claim(s) 1-34 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 07/28/03 & 09/01/04 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Arguments***

Applicant's arguments with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3, 5-9, 11-14, 16-18, 21-25, 27-30, and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo (JP Patent No. 06-141257).

Endo discloses projection system (see Drawings 1-8), comprising: a projection device (11) configured to project visible video images onto a screen (14, 27); a secondary signal transmitter (3, 25, 43) configured to project invisible light signals onto said screen; and wherein said invisible light signals are encoded to represent secondary information (sound or audio – see paragraphs [0001], [0004]-[0006], [0009], [0010], [0012], [0013], [0015]-[0018], [0026], [0029], and [0034]) associated with said video; and wherein said secondary information is audio information (see paragraphs [0001], [0004]-[0006], [0009], [0010], [0012], [0013], [0015]-[0018], [0026], [0029], and [0034]); further comprising one or more receivers (15-17, 28) configured to receive said invisible light

signals projected onto said screen and to decode said invisible light signals; wherein said receivers are loudspeakers (16, 17) configured to receive and decode said invisible light signals into audibly-perceptible sounds; wherein said screen is a reflective surface (see 14, 27) wherein said screen is a transflective surface (also see 14, 27); wherein said secondary signal transmitter is configured to project a plurality of channels of invisible light signals onto said screen (see 3, 25, 43); comprising one or more receivers (15-17, 28) configured to receive said invisible light signals projected onto said screen and to decode said invisible light signals into audibly-perceptible sounds; wherein said receivers are equipped to be selectively configured by a user to decode one of said plurality of channels of invisible light signals into audibly-perceptible sounds at a given time (see function of 15-17, 28); wherein said plurality of channels of invisible light signals represents different channels of a single soundtrack having a surround sound feature (see paragraphs [0009], [0013], [0029], and [0037] – the “different channels of a single soundtrack” is considered to be all the different sound signals associated with the projected images and the “single sound track” is considered to have a “surround sound feature” since a stereo effect is achieved when the different sound signals are outputted to speakers 16 and 17); wherein said plurality of channels of invisible light signals comprise polarized light signals (also see function of the projection optical system elements in Drawing 6 – although not explicitly shown, the projection optical system in Drawing 6 is considered to have some sort of polarizer, since the polarization of light in projection optical systems is well known); plurality of channels of invisible light signals comprise modulated light signals (also see function of the projection optical system

elements in Drawing 6); wherein said invisible light signal comprises infrared light (see 3, 25, 43); wherein said secondary signal transmitter comprises a light emitting diode (see 3, 25, 43); wherein said secondary signal transmitter is positioned outside of said video projection device (see 55); wherein said video projection device includes a lens (26, 44) through which said video images are projected, and wherein said secondary signal transmitter is positioned inside of said video projection device and is configured to emit said invisible light signal through said lens (see 3, 25, and 43); a method for presenting audio information to a video-viewing audience (see function of elements in Drawings 1-8), comprising: projecting video images (see function of 11) onto a screen (14, 27); and projecting invisible light signals (see function of 3, 25, 43) encoded to represent secondary information (audio or sound – see paragraphs [0001], [0004]-[0006], [0009], [0010], [0012], [0013], [0015]-[0018], [0026], [0029], and [0034]) associated with said video images onto said screen concurrently with said video images; wherein said secondary information is audio information (see paragraphs [0001], [0004]-[0006], [0009], [0010], [0012], [0013], [0015]-[0018], [0026], [0029], and [0034]); wherein said video images and said invisible light signals are projected concurrently through a common lens (see 25, 26, 43, 44); wherein said invisible light signals comprise a plurality of separate channels of invisible light signals (see paragraphs [0001], [0004]-[0006], [0009], [0010], [0012], [0013], [0015]-[0018], [0026], [0029], and [0034]); wherein said separate channels of invisible light signals are modulated (see function of elements in Drawing 6); wherein said separate channels of invisible light signals represent different channels of surround sound audio information

associated with a single soundtrack (see paragraphs [0009], [0013], [0029], and [0037]) – the “different channels of surround sound audio information” is considered to be the different sound or audio signals associated with the “single soundtrack” outputted to speakers 16 and 17); further comprising the step of selectively polarizing said invisible light signals (also see function of the projection optical system elements in Drawing 6 – although not explicitly shown, the projection optical system in Drawing 6 is considered to have some sort of polarizer, since the polarization of light in projection optical systems is well known); further comprising receiving said reflected invisible light signals and decoding said reflected invisible light signals into audibly-perceptible sounds (see function of 16, 17); a method for watching and listening to an audio-visual presentation (see function of elements in Drawings 1-8), comprising viewing visually-perceptible light images projected from a video projection device (see function of 11), which are projected onto a screen (14, 27), and listening to an audibly-perceptible soundtrack (sound signals associated with the projected images) decoded from invisible light signals (see paragraphs [0001], [0004]-[0006], [0009], [0010], [0012], [0013], [0015]-[0018], [0026], [0029], and [0034]) projected onto said screen (see function of 16, 17); wherein said listening step includes listening to a plurality of channels of audio information delivered from a plurality of speakers (16, 17); an audio visual projection system (see Drawings 1-8), comprising: a means for projecting video images (11) onto a screen (14, 27); and a means for projecting invisible light signals (3, 25, 43) onto said screen, said invisible light signals being encoded to represent secondary information (sound or audio - see paragraphs [0001], [0004]-[0006], [0009], [0010], [0012], [0013],

Art Unit: 2851

[0015]-[0018], [0026], [0029], and [0034]) associated with said video images; further including at least one receiver (15-17, 28) configured to receive said invisible light signals projected onto said screen and to decode said invisible light signals into audibly-perceptible sounds.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5-9, 11-14, 18-25, 27-30, and 32-34 are rejected under 35

U.S.C. 102(e) as being anticipated by Allen et al. (U.S. Patent No. 6,811,267).

Allen discloses a projection system (Figs. 1-4), comprising: a projection device (10, 42, 58, 60) configured to project visible video images onto a screen (11, 11', 45, 48, 64); a secondary signal transmitter (32) configured to project invisible light signals (infrared) onto said screen; and wherein said invisible light signals are encoded to represent secondary information associated with said video (see col. 3, lines 19-51); and wherein said secondary information is audio information (see col. 5, lines 1-5); further comprising one or more receivers (11', 48, 54a-b, also see col. 4, lines 35-48) configured to receive said invisible light signals projected onto said screen and to decode said invisible light signals; wherein said receivers are loudspeakers (54a-b)

configured to receive and decode said invisible light signals into audibly-perceptible sounds; wherein said screen is a reflective surface (see 11, 11', 45, 48, 64); said screen is a transreflective surface (also see 11, 11', 45, 48, 64 and see col. 4, lines 35-48); wherein said secondary signal transmitter is configured to project a plurality of channels of invisible light signals onto said screen (see function of 32); further comprising one or more receivers (11', 48, 54a-b) configured to receive said invisible light signals projected onto said screen and to decode said invisible light signals into audibly-perceptible sounds; and wherein said receivers are equipped to be selectively configured by a user to decode one of said plurality of channels of invisible light signals into audibly-perceptible sounds at a given time (see function of 11', 48, 54a-b); wherein said plurality of channels of invisible light signals represents different channels of a single soundtrack having a surround sound feature (the "different channels of a single soundtrack" is considered to be all the different sound or audio signals associated with the projected images and the "single sound track" is considered to have a "surround sound feature" since a stereo effect is achieved when the different sound signals are outputted to speakers 54a-b); wherein said plurality of channels of invisible light signals comprise polarized light signals (see 10 - although not explicitly shown, the projection engine is considered to have some sort of polarizer, since the polarization of light in projection optical systems is well known); wherein said plurality of channels of invisible light signals comprise modulated light signals (see 16) wherein said invisible light signal comprises infrared light (see 32); wherein said video projection device includes a lens (38) through which said video images are projected, and wherein said secondary signal

transmitter is positioned inside of said video projection device and is configured to emit said invisible light signal through said lens (see location of 32); wherein said video projection device includes a digital micromirror device (20, 36) having a plurality of micromirrors that each selectively reflects light from a primary light source (14) through a lens (38); and wherein said secondary signal transmitter is positioned inside of said video projection device and is configured to emit said invisible light signal such that it is reflected by a plurality of said micromirrors concurrently with light from said primary light source through said lens (see location of 32); wherein said video projection device includes a digital micromirror device (20, 36) having a plurality of micromirrors that each selectively reflects light from a primary light source (14) through a lens (38); and wherein said secondary signal transmitter is positioned inside of said video projection device and is configured to emit said invisible light signal such that it is reflected by each of said micromirrors through said lens at times when light from said primary light source is not reflected through said lens by said respective micromirror (see 32 and function thereof); a method (see function of elements in Figs. 1-4) for presenting audio information to a video-viewing audience, comprising: projecting video images (see function of 10, 42, 60, 58) onto a screen (11, 11', 45, 48, 64); and projecting invisible light signals (see function of 32) encoded to represent secondary information associated with said video images onto said screen concurrently with said video images (see col. 3, lines 19-51); wherein said secondary information is audio information (see col. 5, lines 1-5) 23; wherein said video images and said invisible light signals are projected concurrently through a common lens (38); wherein said invisible light signals comprise a

plurality of separate channels (different sound or audio signals associated with the projected images) of invisible light signals; wherein said separate channels of invisible light signals are modulated (see function of 16); wherein said separate channels of invisible light signals represent different channels of surround sound audio information associated with a single soundtrack (the "different channels of surround sound audio information" is considered to be the different sound or audio signals associated with the "single soundtrack" outputted to speakers 54a-b); further comprising the step of selectively polarizing said invisible light signals (see 10 - although not explicitly shown, the projection engine is considered to have some sort of polarizer, since the polarization of light in projection optical systems is well known); further comprising receiving said reflected invisible light signals and decoding said reflected invisible light signals into audibly-perceptible sounds (see function of 54a-b); a method (see function of elements in Figs. 1-4) for watching and listening to an audio-visual presentation, comprising; viewing visually-perceptible light images projected from a video projection device (10, 42, 58, 60), which are projected onto a screen (11, 11', 45, 48, 64), and listening to an audibly-perceptible soundtrack (sound or audio signals associated with the projected images) decoded from invisible light signals (infrared) projected onto said screen; wherein said listening step includes listening to a plurality of channels of audio information (sound or audio signals associated with the projected images) delivered from a plurality of speakers (54a-b); an audio visual projection system (Figs. 1-4), comprising: a means for projecting video images (10, 42, 58, 60) onto a screen (11, 11', 45, 48, 64); and a means for projecting invisible light signals (32) onto said screen, said

invisible light signals being encoded to represent secondary information associated with said video images (see col. 3, lines 19-51); further including at least one receiver (11', 48, 54a-b) configured to receive said invisible light signals projected onto said screen and to decode said invisible light signals into audibly-perceptible sounds.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 4, 10, 26, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (JP Patent No. 06-141257) in view of Folio (U.S. Patent No. 6,483,568).

Endo discloses the claimed invention except for receivers comprising "personal headphone sets configured to receive and decode said invisible light signals into audibly-perceptible sounds"; a plurality of channels of invisible light signals representing "alternative soundtracks associated with said video images projected onto said screen"; separate channels of invisible light signals representing "different soundtracks associated with a single video"; and "different persons viewing the same set of visually-perceptible light images listen to different soundtracks associated with said set of projected light images".

Folio teaches providing personal headphone sets (50a, 50d - see 50a of Fig. 4) configured to receive and decode said invisible light signals into audibly-perceptible sounds; a plurality of channels of invisible light signals (infrared signals transmitted by wireless transmitter 42a – see col. 5, lines 52-57) representing alternative soundtracks (alternate languages for a movie - see function of 76a in col. 7, lines 43-46) associated with said video images projected onto said screen; separate channels of invisible light signals (infrared signals transmitted by wireless transmitter 42a – see col. 5, lines 52-57) representing different soundtracks (alternate languages for a movie – also see function of 76a in col. 7, lines 43-46) associated with a single video; and different persons (different movie patrons) viewing the same set of visually-perceptible light images listen to different soundtracks (alternate languages for a movie – also see function of 76a in col. 7, lines 43-46) associated with said set of projected light images.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the “projection system”/ “method for presenting audio information to video-viewing audience”/ “method for watching and listening to an audio visual projection device”/ “audio visual projection system” of the Endo reference with a “personal headphone sets”, as taught by Folio in order to provide a system and method that can efficiently and economically provide supplemental audio content to a viewer or viewers (see col. 2, lines 30-34).

2. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (JP Patent No. 06-141257) in view of Allen et al. (U.S. Patent No. 6,727,935).

Endo discloses the claimed invention except that infrared light is used instead of "ultraviolet light". Allen shows that that the use of ultraviolet light as an equivalent invisible light is known in the art (see col. 5, lines 45-51). Therefore, because these two invisible lights were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the "ultraviolet light" for the infrared light.

3. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (JP Patent No. 06-141257) in view of Johnson et al. (U.S. Patent No. 6,377,306).

Endo discloses the claimed invention except for a video projection device that includes a "digital micromirror device".

Johnson teaches providing a video projection device (8) that includes a digital micromirror device (DMD).

It would have been obvious to one of ordinary skill in the art at the time invention was made provide the "projection system" of the Endo reference with a "digital micromirror device", as taught by Johnson in order to provide a lightweight, reliable, digital display with a wide viewing angle and good picture clarity (see col. 5, lines 34-44).

4. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (JP Patent No. 06-141257) in view of Allen et al. (U.S. Patent No. 6,811,267).

Endo discloses the claimed invention except that the video projection device includes an LCD panel instead of a "digital micromirror device". Allen shows that an LCD panel is an equivalent structure known in the art (see col. 2, lines 32). Therefore, because these two image-forming elements were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the "digital micromirror device" for the LCD panel.

5. Claims 4, 10, 26, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (U.S. Patent No. 6,811,267) in view of Folio (U.S. Patent No. 6,483,568).

Allen discloses the claimed invention except for receivers comprising "personal headphone sets configured to receive and decode said invisible light signals into audibly-perceptible sounds"; a plurality of channels of invisible light signals representing "alternative soundtracks associated with said video images projected onto said screen"; separate channels of invisible light signals representing "different soundtracks associated with a single video"; and "different persons viewing the same set of visually-perceptible light images listen to different soundtracks associated with said set of projected light images".

Folio teaches providing personal headphone sets (50a, 50d - see 50a of Fig. 4) configured to receive and decode said invisible light signals into audibly-perceptible sounds; a plurality of channels of invisible light signals (infrared signals transmitted by wireless transmitter 42a – see col. 5, lines 52-57) representing alternative soundtracks (alternate languages for a movie - see function of 76a in col. 7, lines 43-46) associated

with said video images projected onto said screen; separate channels of invisible light signals (infrared signals transmitted by wireless transmitter 42a – see col. 5, lines 52-57) representing different soundtracks (alternate languages for a movie – also see function of 76a in col. 7, lines 43-46) associated with a single video; and different persons (different movie patrons) viewing the same set of visually-perceptible light images listen to different soundtracks (alternate languages for a movie – also see function of 76a in col. 7, lines 43-46) associated with said set of projected light images.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the “projection system”/ “method for presenting audio information to video-viewing audience”/ “method for watching and listening to an audio visual projection device”/ “audio visual projection system” of the Allen reference with “personal headphone sets”, as taught by Folio in order to provide a system and method that can efficiently and economically provide supplemental audio content to a viewer or viewers (see col. 2, lines 30-34).

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (U.S. Patent No. 6,811,267) in view of Allen et al. (U.S. Patent No. 6,727,935).

Allen '267 discloses the claimed invention except that infrared light is used instead of “ultraviolet light”. Allen '935 shows that the use of ultraviolet light as an equivalent invisible light is known in the art (see col. 5, lines 45-51). Therefore, because these two invisible lights were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the “ultraviolet light” for the infrared light.

Allowable Subject Matter

1. Claim 35 is allowed.
2. Claim 35 has been found to be allowed because the prior art of record either alone or in combination neither discloses nor makes obvious the projection system with the feature of a "secondary signal transmitter to project invisible light signals encoded to represent secondary information associated with said video images onto a second screen" in combination with the other particular combination of features recited in the claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Richter (U.S. Patent No. 6,283,862) discloses a playback device (12) which is adapted to play back the game sequence in a projection zone and which is connected with the computer unit (10), at least one transmitter means (16) which is adapted for emitting an electromagnetic beam (S) into a predetermined partial section of the projection zone, a detector means (18) which is adapted for the detection of the electromagnetic beam (S).

Hiramatsu (U.S. Patent No. 6,339,748) discloses an infrared ray source 3 and a projector 7, example, a liquid crystal projector that serves to form an image from an image ray on a transmissive screen 2.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB



JUDY NGUYEN
PRIMARY EXAMINER